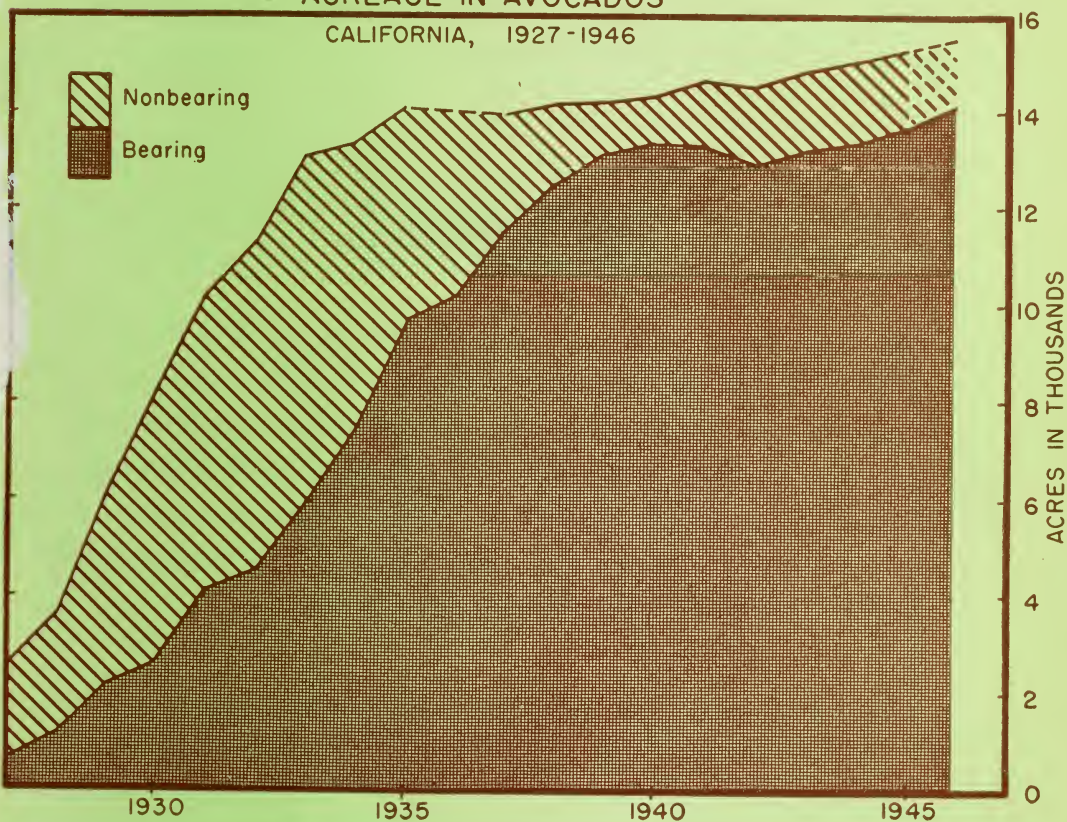


AVOCADO SITUATION IN CALIFORNIA 1947

WALLACE SULLIVAN

ACREAGE IN AVOCADOS

CALIFORNIA, 1927-1946





THE SITUATION



CALIFORNIA produces almost three fourths of the supply of avocados in the United States, and consumes nearly two thirds of her own production. Florida and Cuba are the primary sources of supply for the east coast. The alternate-bearing habit of the fruit and the variations in weather cause the yield to fluctuate violently; nevertheless, the trend in the past twenty years has been upward.

THE OUTLOOK

THE OUTLOOK for avocados in California for the next few years appears to be favorable. Increased production and a possible recession in consumer buying power may cause some decline in farm prices; but increase in population—especially in California—will be a steadying factor. Since production costs are not likely to decline so rapidly nor to the same extent as farm prices, avocado growers should increase efficiency of production and reduce farm indebtedness.

AVOCADO SITUATION IN CALIFORNIA, 1947

WALLACE SULLIVAN¹

SUPPLY: The tremendous increase in bearing acreage of avocados in California since 1927 will continue as additional acreage comes into bearing. High farm prices for avocados during the war and postwar years have stimulated further plantings.

PRODUCTION

THE AVOCADO is a subtropical fruit. Its commercial production is thus limited to localities with winters as mild as those in parts of Central and South America, in the islands of the Caribbean, and in the extreme southern parts of the United States. It has been consumed primarily in areas adjacent to where it is grown, because people were familiar with it, and because transportation to more distant places was difficult. Under present methods of handling, however, the fruit should reach consumers about one month after harvesting.

United States. The total supply of avocados in the United States available for consumption has expanded tremendously although irregularly between 1924, when it amounted to only 2,161 tons, and 1943, when it reached 27,618 tons (fig. 1). Between 1940 and 1946, the total yearly United States supply averaged 21,500 tons, compared with just over 3,560 tons between 1924 and 1930.

California. It was not until 1924 that California became an important commercial producing area for avocados, with an output of 130 tons, which figure was a mere 6 per cent of the total supply available that year. Florida, the other important avocado-producing state, reported an output of 420 tons in 1929, although commercial production had started many years prior to that date.

California's production of avocados increased rapidly, although irregularly, from 130 tons in 1924 to 21,300 in 1943, then dropped to only 14,800 tons in 1946. In Florida, output of avocados increased from 420 tons in 1929 to 5,800 tons in 1944, then declined to only 1,600 tons in 1946.

Cuba and Other Countries. Prior to 1930, the bulk of avocados consumed in the United States was imported from Cuba, with 2,031 tons, or 94 per cent of the total, in 1924. During the 1930's imports fluctuated considerably, from a high of 5,628 tons in 1937 to a low of 300 tons in 1939. Although imports reached a peak of 5,854 tons in 1940, they were on a greatly decreased level during the war years.

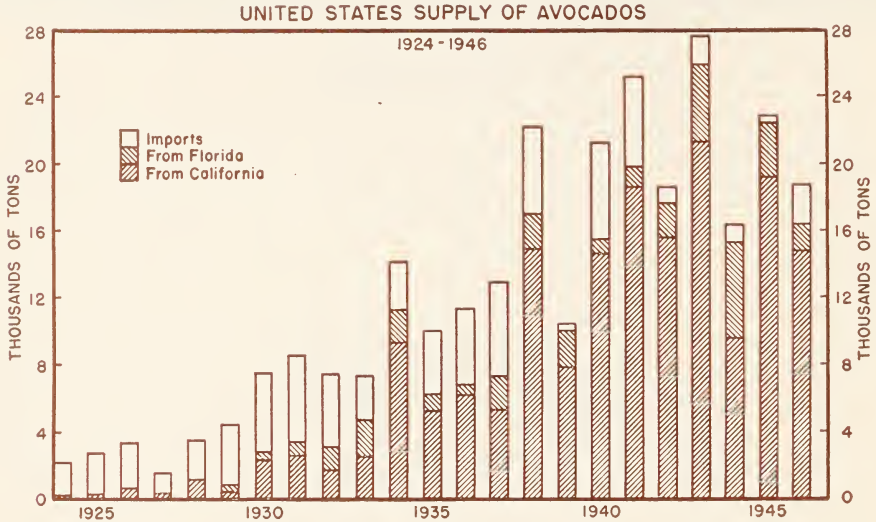
During the years 1940 to 1945, output of avocados in California averaged about 15,900 tons a year, or about 73 per cent of the total supplies for those years. Florida's average output for the same period amounted to about 2,930

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tons a year, or about 13 per cent of the total. Imports, almost entirely from Cuba, averaged 2,960 tons a year, or 14 per cent of the total.

In addition to Cuban imports, negligible quantities have occasionally been received from the British West Indies, Mexico, Haiti, and the Dominican Republic. These imports have been sporadic, and have not exceeded 17 tons in any one year. High transportation costs, perishability of the product, tariffs, and quarantine regulations have limited imports from all countries except Cuba.

Figure 1



Trade agreements with Cuba permit imports of avocados free of duty during June, July, August, and September. In the other 8 months a tariff of 15 cents a pound practically eliminates imports.

ACREAGE

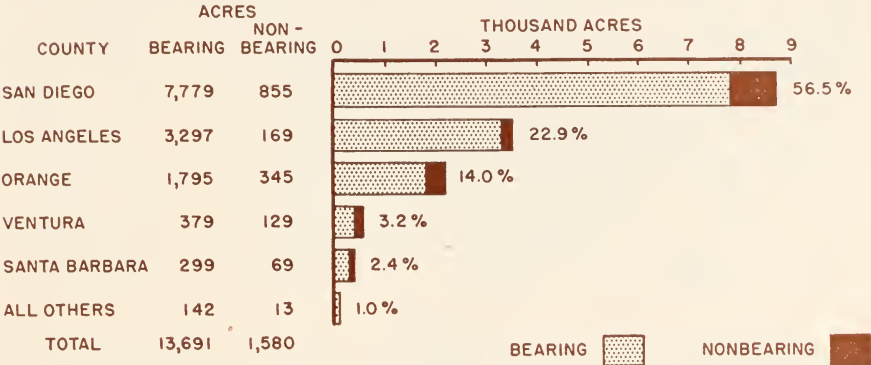
United States. Although commercial avocado production in the United States is confined largely to California and Florida, considerable interest is reported in the lower Rio Grande Valley in Texas, where several large experimental plantings are under way. Avocados planted in backyards and in small areas are to be found in other states bordering the Gulf of Mexico, but the future commercial production in these areas is still somewhat doubtful.

Exact data on the avocado acreage by years in Florida are not available. Those obtainable indicate that by 1946, some 3,500 acres were planted, of which about 2,500 were in bearing. In Florida, trees begin to bear at three years of age and increase in production very rapidly. Conservative estimates indicate that from 1,000 to 1,500 acres of new plantings were made in Florida in the period between 1945 and 1947.

California. In California the area in avocados has expanded rapidly and rather uniformly, from 2,567 acres in 1927 to 15,271 in 1945 (see cover). In 1927 the area in bearing orchards amounted to only 690, or less than 27 per cent of the total acreage. It must be remembered that, in reporting bearing acreage, avocado trees are considered as bearing at five years of age, although there is some production of fruit prior to that age. Nonbearing acreage exceeded bearing until 1933. Since then, however, the proportion of nonbearing to total acreage has shown a consistent tendency to decline. In 1945 about 90

Figure 2

AVOCADO ACREAGE IN CALIFORNIA BY COUNTIES



per cent of the total acreage was in bearing. Preliminary data for 1946 indicate a bearing acreage of 14,130 acres, nonbearing, 1,629, and new plantings, 432. The California Crop Reporting Service reports 218 acres planted in 1945 and 432 acres in 1946. Nurserymen and others believe this is much too low.

By Counties. Although some acreage of avocados is reported in 14 counties in California, 99 per cent of the state's total in 1945 was located in only 5 counties (fig. 2): San Diego County, with 56.5 per cent of the total; Los Angeles, 22.9 per cent; Orange, 14.0 per cent; Ventura, 3.2 per cent; and Santa Barbara, 2.4 per cent.

The other 9 counties reporting acreage in 1945 were San Bernardino, 63 acres; Riverside, 59; Butte, 10; San Luis Obispo, 7; Tulare, 7; Santa Clara, 4; Santa Cruz, 2; Sonoma, 2; and Fresno, 1. Of a total of 155 acres, only 13 were in bearing. Although most of this acreage is in improved varieties of avocados, it is highly doubtful—but not yet known—whether commercial production is feasible in the more northerly counties.

YIELD

Average Yields per Acre. Although increase in acreage is the primary reason for the very marked increase in avocado production in California since 1924, a secondary reason is the very great, although irregular, increase in average yields per acre (fig. 3). For example, during the six-year period 1939 to 1945

the average annual yield per acre amounted to 2,200 pounds as compared with 1,140 pounds during the six-year period 1927 to 1933. The highest state average yield on record was 3,220 pounds per acre in 1943.

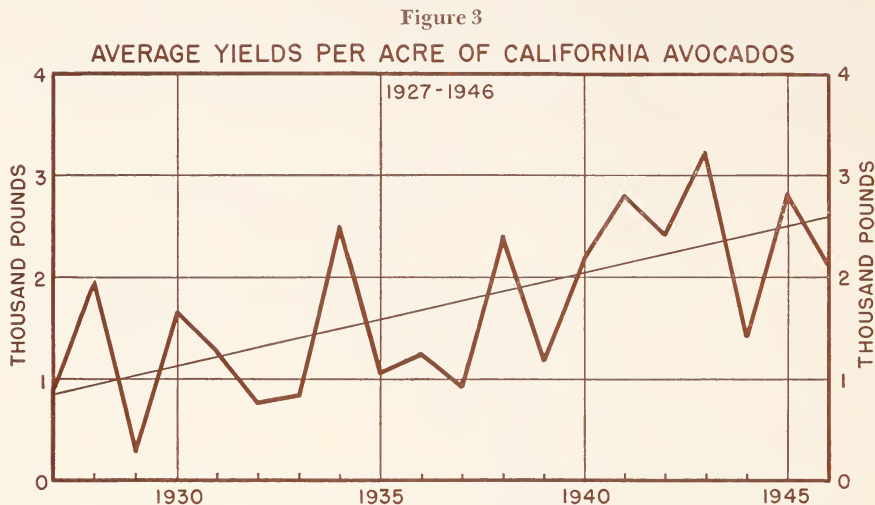
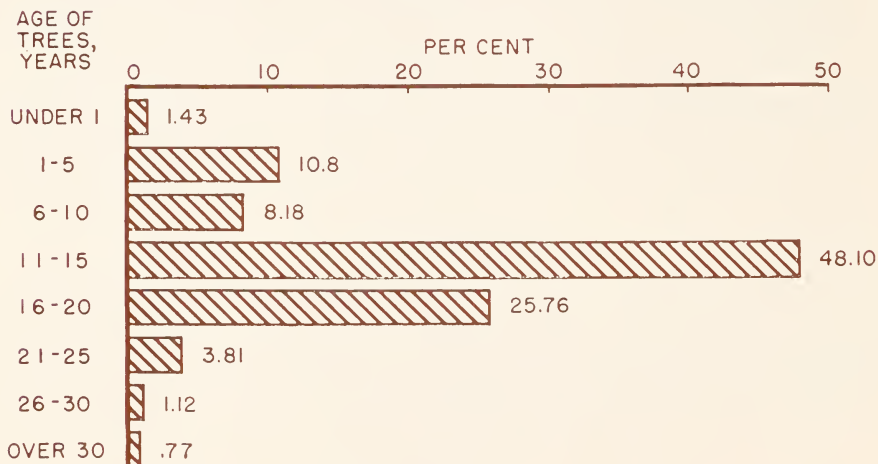


Figure 4

PERCENTAGE DISTRIBUTION OF TOTAL ACREAGE
OF AVOCADOS BY AGE GROUPS

1945



Irregularity in the annual yields of avocados per acre is due to variations in weather conditions and to the alternate-bearing habit of the avocado tree—a heavy crop followed by a light crop.

The marked upward trend in average yields per acre is attributable to two factors—improvement in cultural practices and greater age of the trees. Figure

4 indicates that nearly 70 per cent of the avocado trees in California are under fifteen years of age, and that less than 6 per cent are over twenty years of age.

Because the avocado is a comparatively new tree fruit in the United States, its age at maximum production and its age at decline in output are not known. Nor is there information on maximum production of mature trees growing

Figure 5
AVOCADO YIELDS PER ACRE BY COUNTIES, SIX-YEAR AVERAGE
1939 - 1945

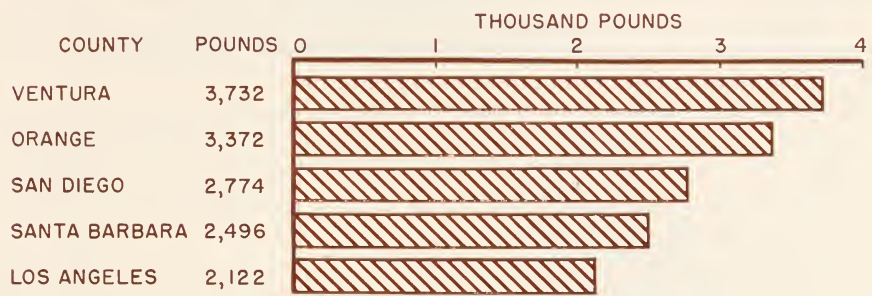
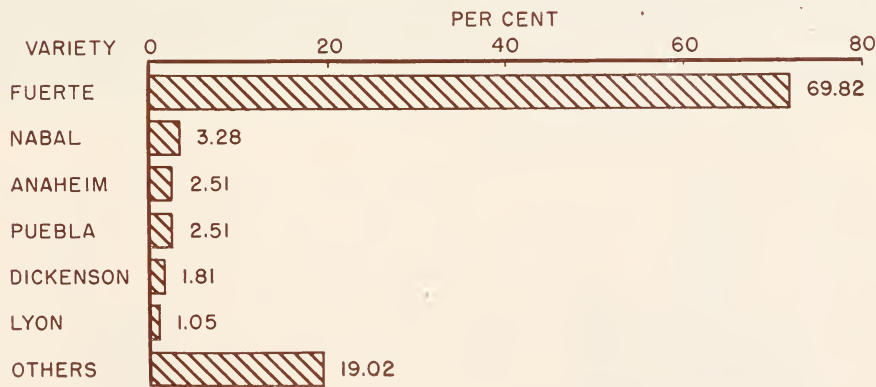


Figure 6
PERCENTAGE OF CALIFORNIA AVOCADO ACREAGE BY VARIETIES
1945



under the most favorable cultural conditions. Many good commercial orchards yield from 6,000 to 12,000 pounds per acre. Some orchards have reported occasional yields as high as 20,000 pounds per acre. Variations in average yields per acre in the 5 main avocado-producing counties in California are shown in figure 5. It should be remembered that these county averages are obtained by dividing the total county production by the total acreage of trees five years of age and older. Ventura County, with only 3.2 per cent of total acreage in 1945, had an average yield of 3,732 pounds per acre during the six-year period 1939

to 1945. Orange County (with 14 per cent of the 1945 acreage) ranked next, with an average yield of 3,372 pounds per acre, followed by San Diego, 2,774 pounds, Santa Barbara, 2,496 pounds, and Los Angeles, 2,122 pounds.

Acreage by Varieties. Fuerte is the most important variety of avocado in California (fig. 6). In 1945, it comprised nearly 70 per cent of the total acreage. Numerous other varieties are grown but their acreage is small as compared with that in Fuerte. Still other promising varieties are being tested by the California Agricultural Experiment Station and by interested growers.

Seasonal Production. Avocados are harvested every month in California. Data compiled by the Calavo Growers of California indicate that October is the month of lowest production and that March is the highest (fig. 7). Nearly two thirds of all avocados are produced during the five-month period January to May.

There are, however, wide variations in the seasonal production of the different varieties of avocados. The Fuerte produces over more months than any other variety. Moreover, it becomes available during the first 5 months of each year. The peak of production of the other four leading varieties (fig. 7) comes in the months of June to October.

These data indicate that an expansion of acreage of varieties other than Fuerte would promote a more uniform production throughout the year. However, production in June to October would come into direct competition with that of Florida and Cuba in the eastern market.

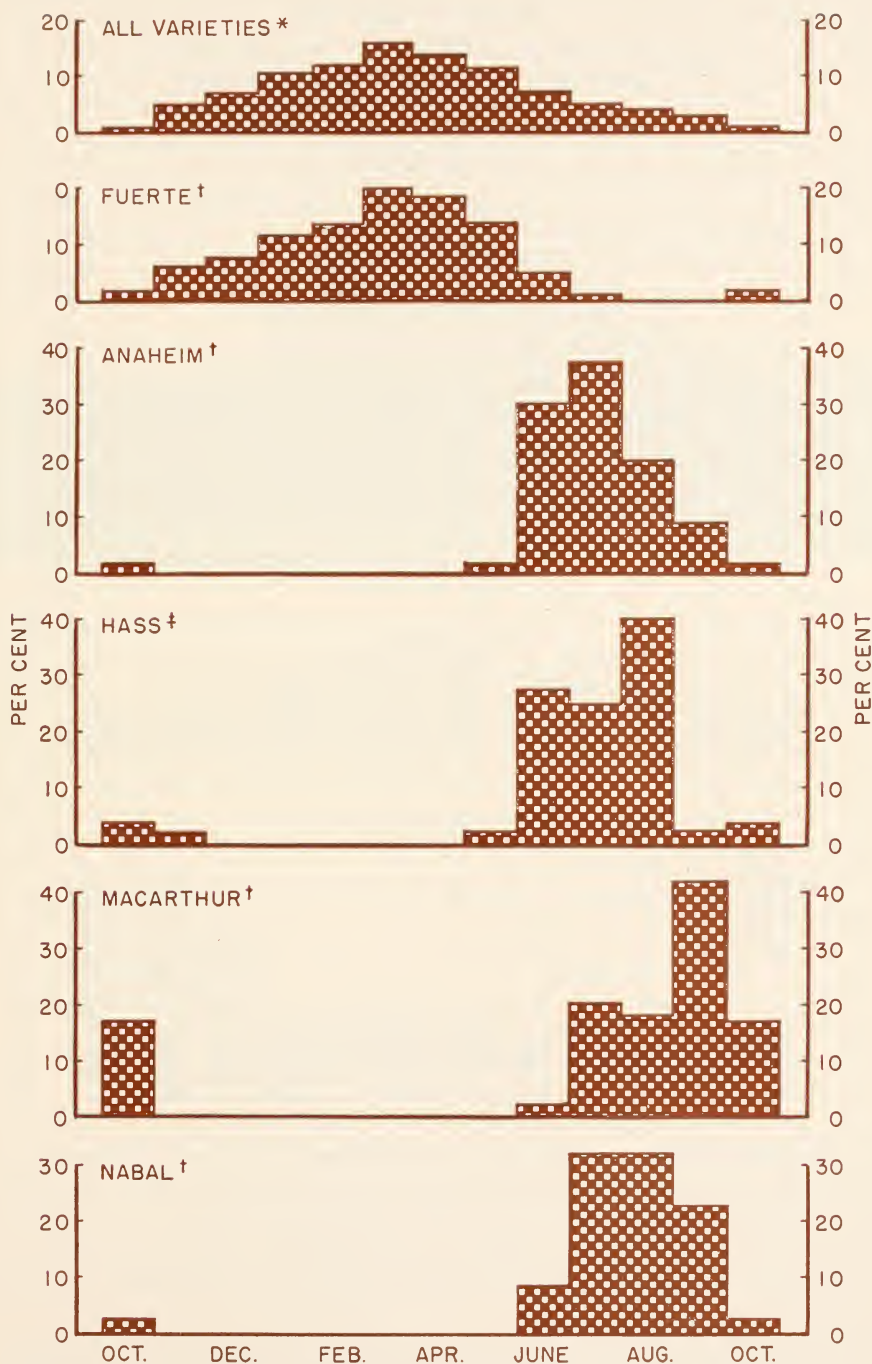
DEMAND: United States consumption of avocados is less than one-half pound per capita. The bulk of all avocados is marketed along the eastern and western seaboard.

Avocados are a comparatively new food product in the United States. The average per-capita consumption is still under one-half pound per capita. Although consumption is gradually expanding into other areas, the bulk is still consumed largely along the Atlantic and Pacific seaboard. The states along the Atlantic draw their supplies mainly from Cuba and Florida, although California does supply approximately one third the total. The heaviest per-capita consumption is undoubtedly in the two producing states, California and Florida.

During the seven-year period 1939 to 1945, unloads of avocados at Los Angeles, San Francisco, and New York averaged about 1,102 cars a year. Of New York's supply, 114 cars a year came from Cuba; 42, from Florida; and 79, from California (fig. 8).

Unloads at Los Angeles averaged 637 cars a year and at San Francisco, 229 cars a year—all originating within the state. Assuming the average weight of a car of avocados to be 11 tons, the total weight unloaded at the two California cities averaged 9,526 tons a year, or about 60 per cent of the average annual production during the seven-year period. This figure does not include local

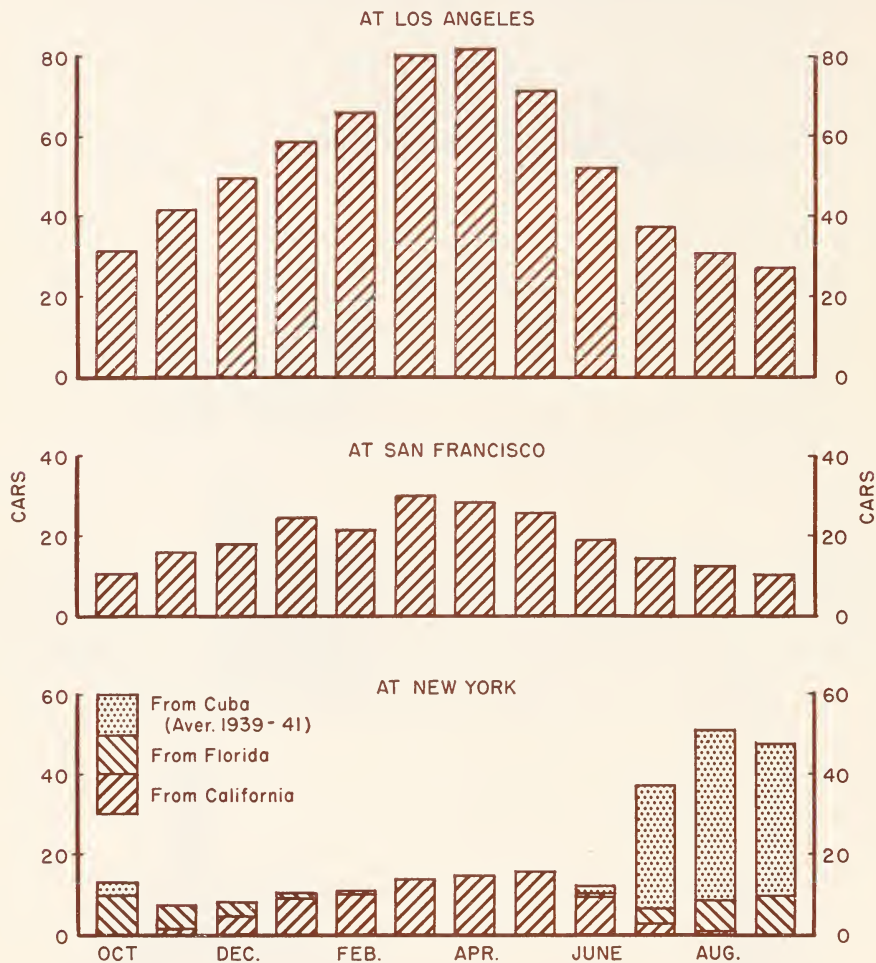
Figure 7
PERCENTAGE OF AVOCADO CROP HARVESTED
EACH MONTH BY VARIETIES



* 10-YEAR AVERAGE, † 4-YEAR AVERAGE, ‡ 2-YEAR AVERAGE.
1935-36 TO 1944-45.

sales and usage in and around producing areas. It may be safe to assume that approximately two thirds of all avocados produced in California are consumed in the state.

Figure 8
CAR UNLOADS OF AVOCADOS : BY MONTHS
AVERAGE 1939 - 1945



Marketing Problems. In California, marketing problems in avocado production did not become acute until about 1934. Prior to that year, local markets were able to absorb the limited production at high prices. In fact, prices were so high that they discouraged any appreciable extension in the use of avocados and, at the same time, greatly stimulated the planting of avocado orchards.

As production increased, the merchandising problem became more difficult. New markets had to be developed, but they were established with difficulty,

because of the wide fluctuations in annual output. New techniques of picking, packing, transportation, storage, and distribution had to be developed in order to promote consumer demand for a comparatively unknown and relatively perishable product. In eastern markets, California had to meet the competition of low-priced and inferior-quality avocados from Cuba and the widely fluctuating production of Florida.

In order to meet these problems, the Calavo Growers of California, a co-operative marketing organization, was organized with headquarters in Los Angeles in the early 1920's, and has grown up with the industry, expanding its facilities as production increased. The United Avocado Growers of La Habra was organized in more recent years to meet the demands of an expanding industry.

PRICES AND COSTS: Farm prices of avocados declined rapidly between 1924 and 1931. From 1932 to 1941 the trend was slightly downward, but during the war years it rose rapidly. Prices are likely to decline more rapidly than costs during the next few years.

Farm Prices. Farm prices of avocados displayed two important characteristics during the period 1924-25 to 1941-42 (fig. 9). First, they tended toward violent year-to-year fluctuations, which were associated with marked year-to-year fluctuations in the supply of avocados in the United States. Annual supply, as was pointed out earlier, varies greatly from year to year because of changes in weather conditions and the alternate-bearing habit of the avocado trees. The second characteristic was a downward trend in prices, associated with an expanding volume of production and imports of avocados. This decline was rapid between 1924-25 and 1931-32, but more gradual between 1932-33 and 1941-42. The average price received by growers in California was 36.0 cents a pound in 1924-25, 8.6 cents a pound in 1931-32, and 5.0 cents a pound in 1941-42, as may be seen in table 1, page 13.

Farm prices of avocados in California rose rapidly during the war years to a new peak of 26.1 cents a pound in 1944-45 (small-crop year), but declined again to 14.9 cents a pound in 1945-46 (large-crop year). Production of avocados in both California and Florida for the 1946-47 crop year is estimated at considerably below that for 1945-46. It is, therefore, reasonable to expect that the farm price per pound in California for the 1946-47 crop will run substantially above that for 1945-46. Data computed by the Calavo Growers of California indicate that annual prices of avocados f.o.b. Los Angeles for the ten-year period 1935-36 to 1944-45 varied from \$0.90 a flat of 13 pounds in 1938-39 to \$4.19 a flat in 1944-45, the average for the period being \$1.71 a flat, or 13.1 cents a pound (fig. 9).

Costs. Data collected by the California Agricultural Extension Service for the annual avocado efficiency studies made in San Diego and Orange counties

are presented in figure 10. These data on costs, yields, returns, and profits for the ten-year period 1936 to 1945 are for a group of *better than average* avocado orchards.

Figure 9

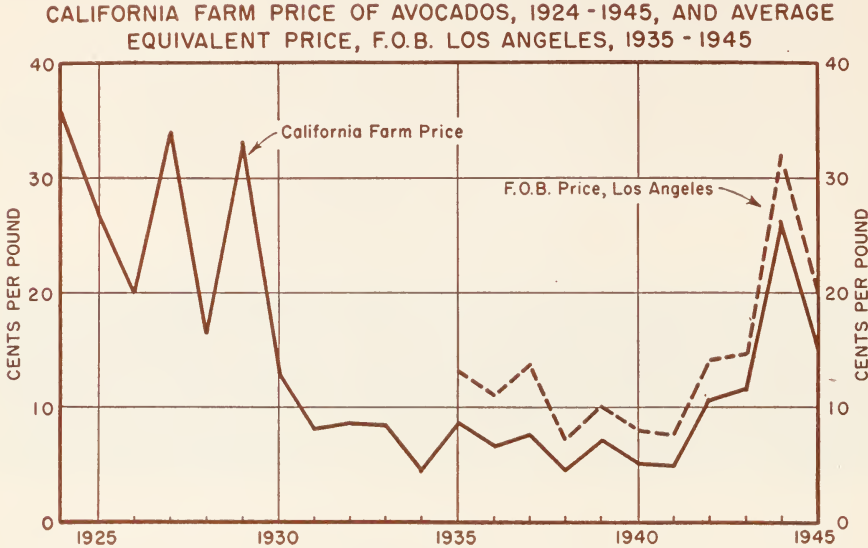
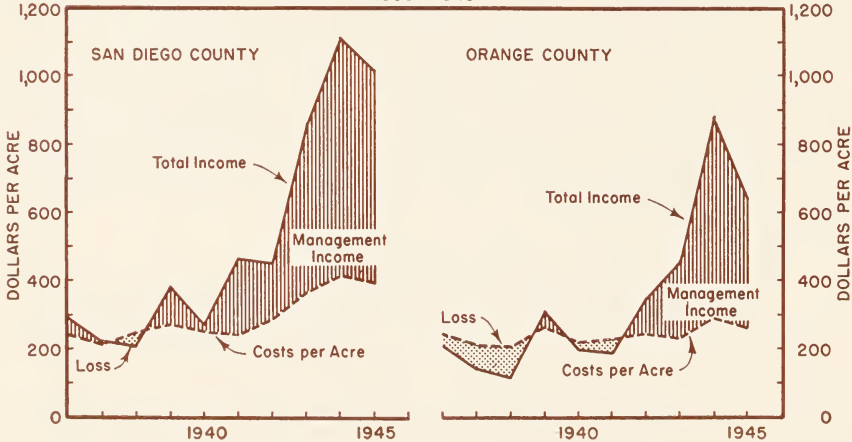


Figure 10

TOTAL INCOME, MANAGEMENT INCOME, AND COSTS PER ACRE FOR AVOCADOS
1936 - 1945



These data indicate that total income exceeded cash costs and depreciation in San Diego County in nine of the ten years, and in Orange County in five of the ten years. Both total income and costs per acre were on a much higher level in San Diego County than in Orange County. The outstanding point in these data is that, during the past few years, management income per acre greatly

exceeded total costs per acre. This indicates the profitability of avocado production on reasonably efficient orchards during the war years—a fact that has encouraged a considerable increase in new plantings during recent years.

Table 1
AVOCADO PRODUCTION, IMPORTS, AND SUPPLY, AND
CALIFORNIA FARM PRICE, 1924-1945

Year	California†	Production Florida†	Total United States	Imports	United States supply	California farm price
	tons	tons	tons	tons	tons	cents per pound
1924	130	.....	130	2,046	2,161	36.0
1925	230	.....	230	2,509	2,739	27.0
1926	620	.....	620	2,688	3,308	20.0
1927	320	.....	320	1,165	1,485	34.0
1928	1,150	.....	1,150	2,375	3,525	16.5
1929	400	420	820	3,372	4,192	32.9
1930	2,150	620	2,770	4,773	7,543	13.0
1931	2,600	820	3,420	5,097	8,517	8.3
1932	1,700	1,400	3,100	4,340	7,440	8.6
1933	2,500	2,200	4,650	2,631	7,331	8.4
1934	9,300	2,000	11,300	2,811	14,111	4.4
1935	5,200	1,000	6,200	3,765	9,965	8.6
1936	6,200	600	6,800	4,559	11,359	6.5
1937	5,300	2,000	7,300	5,628	12,928	7.6
1938	14,900	2,100	17,000	5,158	22,158	4.3
1939	7,800	2,200	10,000	300	10,300	7.2
1940	14,600	880	15,480	5,854	21,334	5.3
1941	18,600	1,250	19,850	5,342	25,192	5.0
1942	15,600	2,100	17,700	865	18,565	10.6
1943	21,300	4,600	25,900	1,718	27,618	11.4
1944	9,500	5,800	15,300	1,018	16,318	26.5
1945*	18,600	3,200	21,800	.....	.....	....

* Preliminary.

† Crop reporting year: California, November to October; Florida, July to January.

Sources of data:

California Crop and Livestock Reporting Service. California production, average per ton returns to growers, and value of production for avocados, dates, persimmons, and pomegranates. August 10, 1942 and June 18, 1945. (Mimeo.)

U. S. Dept. Agr. Agricultural Statistics. Annual issues, and general crop reports, December issues. Agricultural prices.

U. S. Dept. Commerce. Monthly summary of foreign commerce of the United States. Monthly issues.

Although average annual volume of production of avocados in California and Florida during the years 1942-43 to 1946-47 was on a substantially higher level than during the immediate prewar years (see fig. 1, p. 4), imports of avocados from Cuba were on a greatly reduced level. The net result was that total supplies of avocados in the United States since 1942-43 were not markedly greater than during the immediate prewar years.

As new orchards come into bearing, and as bearing trees approach maturity, a greater supply of avocados can be expected in both California and Florida.

If, at the same time, imports of avocados from Cuba approach or exceed pre-war levels, the larger supply available during the next few years could be marketed only at substantially lower prices than prevailed during the war years. A recession in consumer buying power would tend to aggravate the situation.

On the brighter side of the picture is the fact that per-capita consumption of avocados in the United States is still very low. There is a large and wholly untapped market in the central and northern parts of the United States. Such outlets can be and are being developed in these areas. Vigorous merchandising programs are under way, to develop new outlets, improve advertising and display, and reduce losses in transit, in storage, and in retail stores.

As was pointed out above, a decline in farm prices of avocados during the next few years is to be expected. Labor costs, taxes, costs of supplies and of irrigation water, however, are not likely to decline to nearly the same extent as prices. Growers will thus be faced with relatively rigid total costs per acre. Unit costs per acre may decline somewhat as trees come into full bearing.

The outlook warrants extreme caution by the growers. They should exert every effort to increase their efficiency of operation, not only by introducing improved cultural practices to increase yields per acre and by eliminating unnecessary expenses, but also by reducing indebtedness.

The statistical data and figures appearing in this circular are summaries of more detailed tables, which are published in a separate Statistical Supplement in mimeographed form and which give the sources in detail. This supplement can be obtained by writing to the Giannini Foundation of Agricultural Economics.